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The Santa Fe Municipal Watershed

Protecting the City's Water Supply and Restoring Forest Health

United States Department of Agriculture

PREPARED BY Forest Service

Southwestern Region

Protecting the City's Water Supply and Restoring Forest Health

The USDA Forest Service and city of Santa Fe are working on a plan to reduce the probability of a high intensity crown fire in the municipal watershed located in the upper Santa Fe River Canyon, adjacent to the east side of Santa Fe. The municipal watershed supplies 40 percent of Santa Fe's water. The thickets of trees covering the watershed and surrounding landscape create a very hazardous fuel situation. A fire starting during hot, dry, windy weather could burn most of the municipal watershed in one day.

This kind of fire would kill most of the forest vegetation and jeopardize homes and lives in the area. The heavy summer rains that typically follow such a fire would result in excessive soil loss, along with ash- and debris-filled floods that would eliminate this portion of the city's drinking water supply and threaten much of downtown Santa Fe.

A high intensity crown fire defies control.

Background

"...we came in sight of Santa Fe, which presented a fine appearance in the distance. It is beautifully situated on a plain of dry and rolling ground, at the foot of a high mountain, and a small stream which rises in the mountain to the west runs directly through the city."

James Thomas, 1846

These words from a caravan leader on the Santa Fe Trail could easily be the words of most modern day visitors and immigrants to Santa Fe. As it was then and is now, this "small stream" is the lifeblood of the city. The Santa Fe River, in part, is the reason the Spaniards settled here in 1610. For hundreds of years, the forests of the upper Santa Fe River Canyon supplied firewood, fence posts, latillas and vigas for Santa Fe's growing population. Its hillsides were grazed by thousands of sheep and cattle, and the canyon became the capital's playground for swimming, fishing, and camping.

Severe flooding and erosion commonly occur following large wildfires.

Over the years, efforts to manage the city's water supply resulted in at least four reservoirs being built in the canyon: Granite Point, Two Mile, Nichols and McClure. Only Nichols and McClure Reservoirs remain to collect and store water for drinking, irrigation and other domestic uses in Santa Fe. In 1932, in an effort to protect the water supply, the Secretary of Agriculture closed the 17,260-acre municipal watershed to livestock grazing, the gathering of forest products, and other public uses.

Current Situation

Historically, ponderosa pine forests were more open and park-like. Frequent low-intensity surface fires thinned out most of the small trees and reduced ground fuels, and seldom impacted the large, mature trees. Fire exclusion over the past 70 years has allowed dense thickets of small trees to grow under the large, mature trees. When trees grow very close together, they shade out ground vegetation such as grasses and forbs. Dense thickets of trees also create a situation where a surface fire can easily ignite the branches and small trees close to the ground and carry the fire into the crowns of the larger trees, transforming the surface fire into an uncontrollable, high intensity crown fire.

Finding solutions to reduce the fuel hazard has been difficult. The soils in the watershed are shallow and rocky, and the slopes are steep. There is only one narrow dirt road extending to the wilderness boundary, and it is only accessed by another narrow road that winds through an historic residential neighborhood. National policy and the Santa Fe National Forest Plan prohibit building additional roads within the watershed. The Pecos Wilderness covers the upper 40 percent of the municipal watershed, and a designated "unroaded recreation area" borders the watershed to the south. The steep, rugged terrain, lack of roads, residential areas, and other constraints limit the amount of woody fuels that can feasibly be removed from the watershed.

The density of small trees creates a significant fire hazard.

Open pine forests thrive on frequent surface fires.

Objectives

There is a need to reduce the number of small trees and create openings in the forest canopy in order to minimize the risk of a catastrophic wildfire. Other objectives are to: increase the amount of grasses, shrubs and riparian vegetation that stabilize the soil, filter sediments, and provide important wildlife values; encourage the growth of large ponderosa pine, aspen and other fire-adapted species; and re-establish the role of low-intensity fire in order to sustain healthy watershed conditions.

Surface burning is done during low fire hazard conditions.

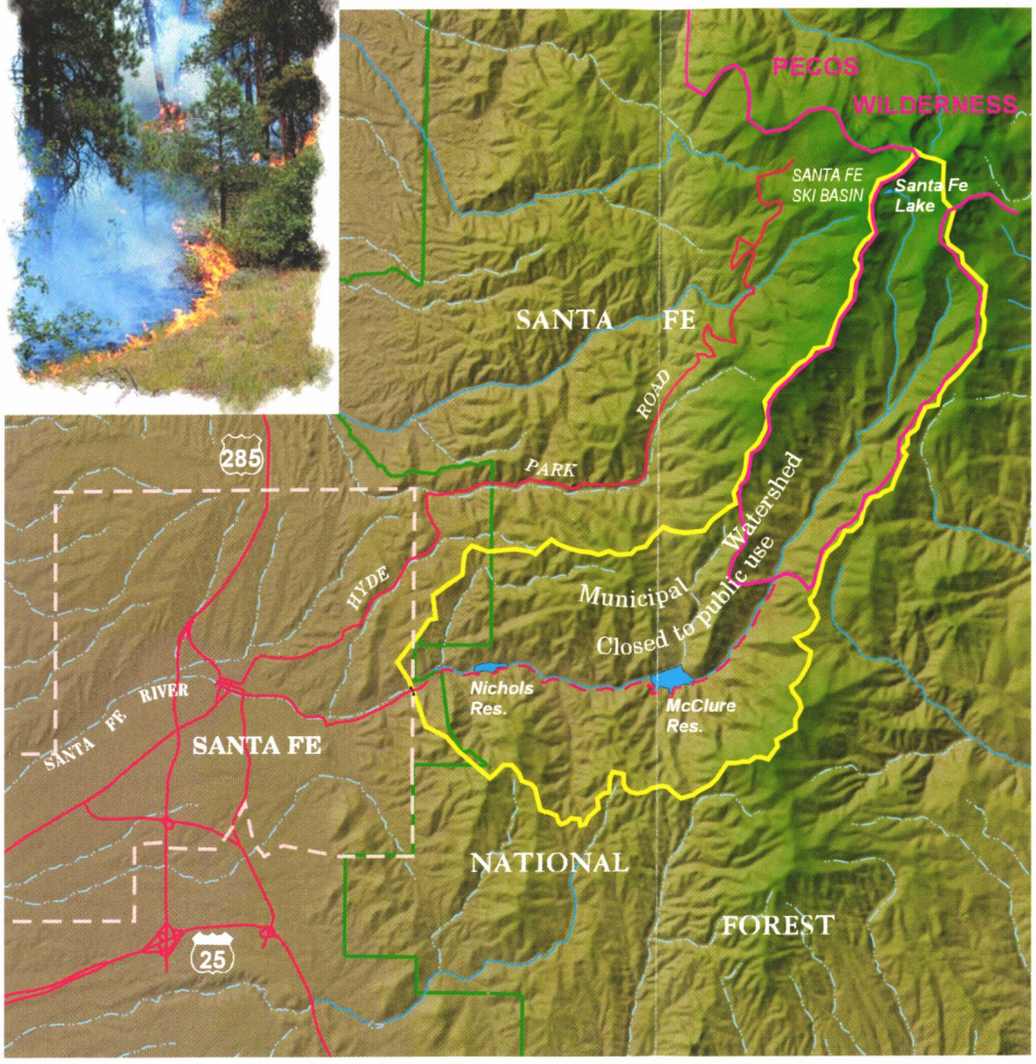
Actions

The USDA Forest Service and city of Santa Fe have been using a collaborative and open planning process, involving research and university scientists, environmental groups, neighborhood associations, community organizations, and interested citizens. Many people have been working together for over a year to examine possible solutions to this complex situation. They developed several management alternatives involving various methods of thinning—with and without burning—on up to 7,000 acres of ponderosa pine and dry mixed conifer forests. The proposed action is to:

- Thin the smallest trees leaving an average of 50 to 100 of the largtest trees per acre, in a clumpy pattern that mimics historical forest stand conditions. Steep, inoperable slopes (over 55 percent) would remain unthinned.
- Pile the branches and small stems (less than 6 inches in diameter) in clearings, and burn the piles during cold, moist weather.
- On gentle terrain accessible to the road (about 500 acres), remove small wood products for local public use. In the rest of the area, leave the logs in place to reduce soil erosion and provide soil nutrients.
- After burning the piles of branches and the remaining logs have begun to decay, use low-intensity prescribed burns to reduce remaining fuel hazards; release nutrients to the soil; stimulate growth of ground vegetation; and restore the natural role of fire to this fire-adapted forest community.

These thinning and burning methods have been successfully used for decades to reduce wildfire intensity and severity. Demonstration sites in the watershed have been thinned so that the public can see the results. To take one of the monthly public tours to these sites, call (505) 954-7120. Additional public involvement activities to encourage discussion of the issues and alternatives are ongoing. The Santa Fe National Forest will distribute a draft environmental impact statement this fall for public review and comment prior to making a decision about this project.

Low intensity surface fires reduce ladder fuels.



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